

### **REMARKS**

This responds to the Office Action mailed on October 12, 2005. Claims 1, 9, 84, 89, 90 and 95 are amended, no claims are canceled, and claims 100-105 are added. Thus, claims 1-22 and 84-105 are now pending in this application. Support for the amendment is found throughout the application, including for example at least at page 41 lines 12-25.

### **§103 Rejection of the Claims**

#### **1st §103 Rejection**

Claims 1, 3, 4, 84, and 90-94 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Endo (U.S. 5,619,051). Applicant respectfully traverses. Endo indicates that the barium strontium titanate opposes electron flow from the floating gate 16 to the control gate 20 (col. 7 lines 56-64). The cited portion of Endo neither shows nor suggests an asymmetrical low tunnel barrier intergate insulator selected to provide a desired first barrier height with respect to the floating gate and a desired second barrier height with respect to the control gate where the first barrier height is different than the second barrier height to promote easier erase operations using electron tunneling from the floating gate to the control gate and to promote longer retention as recited in independent claim 1, or an intergate insulator having a metal oxide with compositional gradients to produce a first barrier height with respect to the floating gate and a different second barrier height with the control gate to promote easier erase operations using electron tunneling from the floating gate to the control gate and to promote longer retention as recited in independent claim 84, or an intergate insulator having a transmission metal oxide with compositional gradients to produce a first barrier height with respect to the floating gate and a different second barrier height with the control gate to promote easier erase operations using electron tunneling from the floating gate to the control gate and to promote longer retention as recited in independent claim 90. The dependent claims are believed to be in condition for allowance with their base claim. Thus, Applicant respectfully requests withdrawal of the rejection, and reconsideration and allowance of claims 1, 3, 4, 84, and 90-94.

2nd §103 Rejection

Claims 9-10 and 13-14 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Endo in view of Orlowski et al. (U.S. 6,433,382). Applicant respectfully traverses. The cited portions of Endo and Orlowski neither show nor suggest compositional gradients formed to produce a first barrier height with the floating gate and a different second barrier height with the control gate to promote easier erase operations using electron tunneling from the floating gate to the control gate and to promote longer retention, as recited in claim 9. The dependent claims are believed to be in condition for allowance with their base claim. Thus, Applicant respectfully requests withdrawal of the rejection, and reconsideration and allowance of claims 9-10 and 13-14.

3rd §103 Rejection

Claims 5-6 and 95-99 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Endo as applied to claim 1 above, and further in view of Eguchi et al. (U.S. 5,618,761). Applicant respectfully traverses. The cited portions of Endo and Eguchi neither show nor suggest an asymmetrical low tunnel barrier intergate insulator selected to provide a desired first barrier height with respect to the floating gate and a desired second barrier height with respect to the control gate where the first barrier height is different than the second barrier height to promote easier erase operations using electron tunneling from the floating gate to the control gate and to promote longer retention as recited in claim 1, or an intergate insulator having a Perovskite oxide with compositional gradients to produce a first barrier height with respect to the floating gate and a different second barrier height with the control gate to promote easier erase operations using electron tunneling from the floating gate to the control gate and to promote longer retention as recited in claim 95. The dependent claims are believed to be in condition for allowance with their base claim. Thus, Applicant respectfully requests withdrawal of the rejection, and reconsideration and allowance of claims 5-6 and 95-99.

4th §103 Rejection

Claims 2 and 89 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Endo in view of Shinkawata et al. (U.S. 2002/0008324). The cited portions of Endo and Eguchi neither show nor suggest an asymmetrical low tunnel barrier intergate insulator selected to provide a desired first barrier height with respect to the floating gate and a desired second barrier height with respect to the control gate where the first barrier height is different than the second barrier height to promote easier erase operations using electron tunneling from the floating gate to the control gate and to promote longer retention as recited in claim 1, or an intergate insulator having an aluminum oxide with compositional gradients to produce a first barrier height with respect to the floating gate and a different second barrier height with the control gate to promote easier erase operations using electron tunneling from the floating gate to the control gate and to promote longer retention, as recited in claim 89. Dependent claim 2 is believed to be in condition for allowance with claim 1. Thus, Applicant respectfully requests withdrawal of the rejection, and reconsideration and allowance of claims 2 and 89.

5th §103 Rejection

Claims 7-8 and 11-12 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Endo. Applicant respectfully traverses. Claims 7-8 depend on claim 1 and are believed to be in condition for allowance at least for the reasons provide with respect to claim 1. Claims 11-12 depend on claim 9 and are believed to be in condition for allowance at least for the reasons provided with respect to claim 9.

**Allowable Subject Matter**

Claims 17-22 were allowed.

Claims 15-16 and 85-88 were objected to as being dependent upon a rejected base claim, but were indicated to be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claim 15 has been rewritten into independent form using the previously presented language of claim 9 as new claim 100, and claim 16 has been rewritten as claim 101 depending on claim 100. Claim 85 has been rewritten

into independent form using the previously presented language of claim 84 as new claim 102,  
and claims 86-88 have been rewritten as claims 103-105 depending on claim 102.

**CONCLUSION**

Applicant respectfully submits that the claims are in condition for allowance, and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney at (612) 373-6960 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.


Respectfully submitted,

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By their Representatives,

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Date 1-12-06

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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Mail Stop Amendment, Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 12 day of January, 2006.

LISA ROSORSKE

Name



Signature